

Verkrijgbaar bij den Phytopathologischen Dienst.

VERSLAGEN EN MEDEDELINGEN
VAN DEN PHYTOPATHOLOGISCHEN DIENST
TE WAGENINGEN No. 13a.

THE PHYTOPATHOLOGICAL SERVICE IN THE NETHERLANDS

MAART 1921

DRUK: H. VEENMAN, WAGENINGEN.



THE PHYTOPATHOLOGICAL SERVICE IN THE NETHERLANDS

The activity of this Service is vast and various and extends over a wide dominion. The staff includes:

An Inspector, Director of the said Service.

Three Phytopathologists.

An Ornithologist.

Two agri- and horticultural Civil Engineers, employed in the service.

Twenty-two Technical Officials and Controllers on field-duty.

A Technical Official for the fitting up of collections and the museum.

The administrative staff is composed of seven employees, and besides there are six assistants and servants employed in the experimentation-fields and the laboratories. The work is divided among the following sections:

1. Section for the examination of diseased or damaged plants, sent in by agri-, horti- and silviculturists, and advice is given as to measures to be taken; and the effectiveness of such measures is inquired after.

2. Section for propagating measures against plant-diseases in horticulture;

3. Section for the propagation of measures against the plant-diseases in agriculture;

4. Section for controlling the execution of the laws, regulating the measures against certain diseases. Besides, for the inspecting of plants, bulbs and potatoes to be exported;

5. Section of ornithology and aviculture in woods and orchards;

6. Section of administration and statistics;

7. Section of the museum, collections and shows.

The activity of each Section will be specified below.

1. It is necessary that agri-, horti- and silviculturists and all people who practise the culture of plants, should be able to get information about the diseases and damages that occur in

their crops. Formerly this information was supplied by the Institute for Phytopathology, likewise established at Wageningen. Ever since July 1, 1919, however, the activity of this Institute is limited to the investigation of some special plant-diseases, the cause of which is as yet unknown or insufficiently known; at the same time it is an educational Institution. The Phytopathological Service is now charged with all other work concerning the combating of plant-diseases in the Netherlands.

As soon as the Phytopathological Service — in connection with specimens sent in for inspection — has detected a plant-disease, the latter is investigated with the help of the technical employees, and all possible measures are taken to combat the disease effectively. Both inspection and advice are gratuitous, and the public avail largely themselves of this opportunity. Laboratories have been instituted for said investigations; they are provided with every requisite for the raising of fungi and the breeding of insects, which is often found indispensable for the fixation of the cause of the disease. If necessary the diseased plants are planted in experimentation-fields for the sake of a closer study; infection-experiments are made, and the several measures of fighting the disease are studied as to their efficiency.

Whenever new or scarcely-known diseases are discovered, the conditions of life of the parasite are investigated, and the efficiency of various remedies is fixed. These investigations are made only if the general work allows of them and if they are not too extensive.

In 1920 an Agricultural Engineer was temporarily adjoined to the Phytopathological Service for making an inquiry into the conditions of life of the leather jackets with the instruction to find an efficient and practicable method of combating the noxious larvae.

Occasionally communications are forwarded to professional periodicals and dailies, and to all authorities on agri- and horticultural matters, in which (communications) the appearance of certain diseases or noxious animals is announced, and the measures for combating or preventing them are made known.

Further the Phytopathological Service has published a series of pamphlets (*Vlugschriften*), in which important diseases and harmful animals are described popularly, together with the curative or preventative measures. The number of pamphlets hitherto published amounts to 37. They are delivered to all persons interested at prime cost.

2. The knowledge of plant-diseases and prohibitive measures in practical horticulture has not kept pace with the progress of phytopathological science. In the first place, as a rule, the horticulturists themselves lack a sufficient knowledge even of the ordinary diseases and insects, and their dangerousness, and 2^o they don't know the measures that may be taken to fight or prevent them, or — and this is even worse — they do know them, but either don't apply them, or apply them the wrong way.

By propagating this knowledge is has been endeavoured to remedy this evil, with conspicuous success. It goes without saying that the said propaganda can only concern such diseases and insects as can be combated by an effective and practicable method.

Every propagative action must needs be preceded by:

1. an inquiry into the most efficient and practicable method of combating the disease, if such a method has not yet been discovered;

2. an inquiry into the spread and the dangerousness of the disease or the plague.

When satisfactory results are obtained, a drastic propaganda is instituted in the districts where the disease or pest has been detected, by means of lectures, by distributing pamphlets, by inserting short notices in locals papers, and chiefly by personal visits to the growers. As a rule, a lecture is followed by a demonstration of the method on the field, e.g. syringing. This propaganda is not discontinued before the utility of the method has been generally recognized, and the growers are able to discriminate the disease or the damage. If possible, the execution of the method prescribed is controlled for some time, because the inaccurate or wrong application of the remedy may yield unfavourable results, which might shake the credit of the method. This control is the more necessary as some diseases or noxious animals after having caused great damage, will sometimes appear far less dangerous, a fact that may mislead the public into believing the prohibitive measures to be superfluous.

At this work the staff are assisted by Correspondents, mostly growers of note and standing who, of their own free will co-operate at the controlling of gardens, orchards etc. Evidently, the correspondents occupy themselves with all or even a great number of plant-diseases, but they concentrate their attention upon some diseases that are of great importance, e.g. the American gooseberry-mildew. In this manner the possibility has been proved of implicating the growers themselves in the propa-

ganda for combating plant-diseases. Further particulars concerning the correspondents, employed in the phytopathological service will be found sub. 3.

The section of propaganda are making a great use of „Mededeelingen of the Phytopathological Service”, i.e. pamphlets in which the parasite, about which the propaganda is concerned, is described, its spread is indicated, and also the damages it may cause; besides the method of combating it, is amply described. The first „Mededeelingen” treat of insects that cause great damage in horticulture.

Hitherto have been published:

- Nr. 1. The bud-moth of the currant-shrub (*Incurvaria capitella*).
- Nr. 2. The „red worm” of the raspberry (*Lampronia rubiella*).
- Nr. 3. The caterpillar of the small wintermoth (*Cheimatobia brumata*).
- Nr. 5. Scales on peach and vine.
- Nr. 8. The cabbage-fly (*Chortophila brassicae*).
- Nr. 10. The silver leave disease of fruit-trees.
- Nr. 15. Experiments with smoke for the protection of crop from night-frost.
- Nr. 18. Phytopathological observations I.
- Nr. 19. Fighting plant-diseases in small gardens.

The above pamphlets are to be had at prime cost (25—75 cents); they are ordered in large numbers by growers.

3. The propaganda for combating field plant-diseases and noxious insects has been started in the same manner. Agriculture covering a far greater extent and being less centralised than horticulture, it was desirable to obtain a great many co-operators who, in their several districts, should promote the divulgation of the knowledge of plant-diseases and noxious insects, and who should rouse the growers to apply the curative or preventative remedies. Said co-operators are the correspondents, mentioned before sub 2. As a rule they are practised growers, who have obtained a diploma at an agricultural or horticultural school and hold a rather prominent place among the local agricultural unions. As a rule there is only one correspondent in each community; in some cases, however, in large communities, there are two or three.

Their number amounts to more than 200.

It is necessary that the correspondents should be conversant with the most important diseases and damages of crops, especially with such as concern the propaganda. To further this,

meetings are held in winter, and in summer excursions are organized for demonstrating plant-diseases on the field.

Correspondents are not remunerated for their services, but all the publications of the Service and occasionally other writings are forwarded to them cost-free. They receive an indemnification for travelling-and-hotel expenses of winter meetings and excursions.

In this manner the knowledge of plant-diseases is spread and the measures to be taken against them are popularized.

By inserting notices in agricultural periodicals the attention of all persons interested is attracted to the appearance of diseases and to the desirability of applying some method or other, e.g. the syringing of potatoes with Bordeaux-pap, the disinfecting of seed-material, etc.

As the application of methods for disinfecting seed varies in proportion of the quality of the seed, an investigation into the influence of the disinfectants upon the germinative power of the seed must sometimes precede the promulgation of said notices.

The agricultural department takes also great pains in inspecting crops on field, the produce of which is to be sold as seed-or planting-material. For the inspection of potato-plants, their diseases are of the greatest significance; therefore a „Mededeeling” has been published in which the diseases of the potato-leafage are treated (nr. 6). Another „Mededeeling” connected with it, treats of the diseases of potato-tubers (nr. 9); ultimately another has been published treating of the diseases of other plants.

These publications have proved to be of great importance for the inspection of crops on field. Moreover the Phytopathological Service has — by means of regular courses — contributed to the increase of the knowledge of inspectors concerning plant-diseases that may be transferred by seed-or planting-material. Occasionally the Service itself has taken part in the inspections. In consequence of the field-inspections many growers have — of late years — applied themselves to selection, in order to raise disease-free seed- and planting-material. Here, too, the Service lends its assistance, especially as regards the selection of early and late potatoes.

Lectures are given wherever they are wanted or asked for by the growers.

Hitherto have been published the following agricultural papers:

Mededeeling:

- Nr. 4. Covered and loose smut of wheat and barley.
- Nr. 6. Potato-diseases that are to be paid regard to in case of inspection or selection.
- Nr. 7. Damage from insects on ploughed-up pasture-ground in 1918.
- Nr. 9. Diseases of potato-tubers.
- Nr. 11. Plant-diseases, to be taken into account when inspecting fields.
- Nr. 14. Protection of the mole.
- Nr. 16. Wart disease of potatoes (Black Scab) in the Netherlands.

4. The Plant-disease Act (of July 17, Staatsblad nr. 212) entitles the Service to prescribe measures for combating plant-diseases or plant-damaging insects, whenever they prove to be dangerous for culture. Hitherto measures have been prescribed against two diseases, viz. the American gooseberry-mildew and the warty disease of potatoes. Every year all localities where said diseases show or may appear, are inspected as minutely as possible, and wherever they are detected such measures are prescribed as the Director of the Service thinks meet. The effects of said measures are carefully controlled.

In order to combat the Am. gooseberry-mildew, the tops of all twigs of this year's growth are pruned off in winter; the prunings are burnt, and the soil underneath and between the shrubs is slightly dug up. The transport of affected gooseberries is controlled, and is solely allowed when destined for factories, to be worked up.

On fields where the warty disease has been stated, all the potatoes are confiscated, and rendered harmless by boiling: Moreover the growing of potatoes on these fields is prohibited, and the growers receive an indemnification, if the prohibition should entail any loss. In our country the spread of the wart disease is inconsiderable; and the most energetic measures are taken to combat it; especially the interdict on growing potatoes, which is carried through very strictly, is a most efficacious measure.

In connection with the restrictive conditions to which several countries (U. S. of America, New Zealand, South-Africa, Tsecho-Slowackia) subject the import of live plants, bulbs and potatoes, an extensive inspective service has been instituted. Evidently the energetic propaganda which is made in our country for the promoting of measures against plant-diseases

greatly contributes to the improvement of the health-conditions of our crops. At the same time it may be stated that the material exported, is of the best of our growth. Moreover a strict inspection is established with regard to the export to countries which require a declaration of health.

The Netherlands have been the first to subject plants to inspection, the moment they are packed for export, a proceeding which affords to the importing country the safest guarantee of absence of disease and noxious insects. One by one the plants are examined by our officials; likewise the inspection of bulbs and potatoes is carried through unremittedly in the most efficacious manner. The Netherlands had already instituted this control (export-inspection), before any country had required it as a restrictive condition.

In consequence of the restrictions put upon the import of live plants (esp. by the U. S.), the number of inspections has decreased. The inspection of bulbs, convallarias and potatoes, however, has obtained a large extent. In 1919 the contents of 49787 chests were inspected, for which 1122 certificates were issued. In 1920 these quantities were respectively 50157 and 1269. 1000 bags were inspected for import.

5. The work of the ornithological section is a very important one. It finds out which bird-species are to be found in each district of our country and to what extent; at the same time the circumstances are stated upon which the presence or absence of certain species depends. The increase or decrease of species in successive years is stated. Data concerning their breeding are gathered, as the duration of the breeding-period and the raising of one or two broods.

These investigations are important for the fixation of the season of egg-gathering lapwings and sea-gulls. Concerning some very useful hole-breeders, several important results have been obtained with regard to the duration of the breeding period, which is greater in proportion as the breeding begins at an earlier date. It is desirable that the investigation of bird-food should be continued and improved, in order to ascertain the usefulness or injuriousness of several species.

The results of these investigations serve as a directive for practical aviculture, i.e. the procuring of breeding-facilities in woods and orchards for the useful bird, and the combating of noxious birds. The desirability of favouring the presence of useful birds is beyond all doubt, and under the guidance of the phytopathological service many attempts have been made

in that respect; we are hoping that the probability of insect-pests (as in 1919 the striped fir-caterpillar and the nun caterpillar) will considerably diminish. On the other hand, methods must be found for driving away of destroying such birds as will cause local damage. A publication on this matter is entitled *Vogelcultuur en Vogelstudie* (Mededeelingen, nr. 17).

6. The Administrative section employs two administrative officials and five lady-clerks. The number of letters and parcels sent in amounts already to more than 1000 monthly, whereas the number of despatches exceeds that figure considerably. All the grounds where gooseberry shrubs grow, are carefully noted with a view to the mildew-inspection; and all the plots where warty disease has been stated are registered.

One special official is charged with collecting data on plant-diseases and nocuous animals, scattered over the pages of agricultural literature. These data relate to the nomenclature, biology, spread, injuriousness and parasites of as many fungi and nocuous animals as can be traced, and serve as a book of reference about these parasites which is as complete as circumstances will allow.

7. Whenever it is possible to do so, material is forwarded to the important horticultural and agricultural shows: diseased or injured fragments of plants, both preserved in alcohol or formalin, as desiccated or fresh; besides apparatuses, used for combating plant-diseases. At the same time, synoptic tables are exhibited to show the working of the Service. The museum serves as a permanent exhibition for the inspection of visitors. Several shows being frequently opened at the same time, sufficient material has been collected for supplying five shows.

This section also makes collections for the use of schools, and agricultural and horticultural courses. The material for these collections is carefully selected in large quantities by the officials. Said collections, composed by experts, will prove to be very useful for educational purposes with regard to the knowledge of plant-diseases.

Publicaties van den Phytopathologischen Dienst

(verkrijgbaar tegen den hieronder vermelden prijs bij den
Inspecteur van den Phytopathologischen Dienst te Wageningen).

Vlugschriften :

Prijs 4 cts. per stuk, + verzendkosten, bedragende voor
1 ex. 3 cts., 10 ex. 5 cts., 50 ex. 20 cts.

- No. 1. Bladluizen.
- No. 2. Schildluizen.
- No. 3. Bladaaltjes.
- No. 4. Resultaten van proeven met Californische pap.
- No. 5. Sproeimachines.
- No. 6. Bordeauxsche pap en Normaalpappoeder.
- No. 7. Californische pap.
- No. 8. Carbolineum en andere sproeimiddelen tegen dieren.
- No. 9. Selderieziekten.
- No. 10. Koolziekten.
- No. 11. Eenige Rhododendron-vijanden.
- No. 12. Eenige belangrijke rozenvijanden.
- No. 13. De kankerziekte der ooftboomen.
- No. 14. De kleine wintervlinder.
- No. 15. De fritvlieg.
- No. 16. Zaaigraanontsmetting.
- No. 17. De bessenbladwesp.
- No. 18. Bestrijding van steen- en stuifbrand in tarwe en gerst
- No. 19. Het stengelaaltje.
- No. 20. Het bieten- of haveraaltje.
- No. 21. Het wortelaaltje.
- No. 22. Roest in granen.
- No. 23. Vlekkenziekte der boonen.
- No. 24. Vlekkenziekte der erwten.
- No. 25. Bietenwortelbrand.
- No. 26. Aaltjesziekten in bolgewassen.
- No. 27. Aardappelwratziekte.
- No. 28. Rondknop bij zwarte-bessen.
- No. 29. Bloedluis.
- No. 30. De slakvormige bastaardrups der ooftboomen
- No. 31. Beukenwolluis.
- No. 32. De zgn. „meeldauw” der tomaten.
- No. 33. De elzen- en wilgensnuittor (*Cryptorhynchus lapathi* L.).
- No. 34. Wilgenhaantjes.
- No. 35. Iepenspintkevers.
- No. 36. Het spint (roode spin).
- No. 37. De klaverkanker.

Voor Mededeelingen zie bladzijde 4 van dit omslag.

Publicaties van den Phytopathologischen Dienst

(verkrijgbaar tegen den hieronder vermelden prijs bij den
Inspecteur van den Phytopathologischen Dienst te Wageningen).

Mededeelingen:

- | | | |
|----------|--|------------------|
| No. 1. | De spruitvreter of knopworm der bessenstruiken.
(12 blz., 5 fig. en 2 kaartjes) | fr. p. p. f 0.35 |
| No. 2. | De roode worm der frambozen. (14 blz.,
2 fig. en 2 kaartjes) | fr. p. p. f 0.35 |
| No. 3. | De trekmade. (22 blz., 6 fig. en 2 kaartjes) | fr. p. p. f 0.20 |
| No. 4. | Steen- en stuifbrand v. tarwe en gerst.
(24 blz., 12 fig. en 4 kaartjes) | fr. p. p. f 0.25 |
| No. 5. | Dopluis op perzik en druif. (15 blz., 9 fig.) | fr. p. p. f 0.17 |
| No. 6. | Aardappelziekten, waarmede rekening
moet worden gehouden bij de veldkeu-
ring en bij de selectie. (19 blz., 1 tabel,
2 gekl. en 10 zwarte fig.) | fr. p. p. f 0.40 |
| No. 7. | Insectenschade op gescheurd grasland
in 1918. (8 blz.) | fr. p. p. f 0.08 |
| No. 8. | De Koolvlieg. (<i>Chortophila Brassicae</i>
<i>Bche</i>) (17 blz., 13 fig.) | fr. p. p. f 0.25 |
| No. 9. | Ziekten van Aardappelknollen. (13 blz.,
1 tabel en 12 fig.) | fr. p. p. f 0.25 |
| No. 10. | De Loodglansziekte onzer ooftboomen
(voorloopige uitgave), (12 blz., 2 platen) | fr. p. p. f 0.20 |
| No. 11. | Plantenziekten waarmede rekening
moet worden gehouden bij de veld-
keuring. (12 bladz., 3 platen) | fr. p. p. f 0.25 |
| No. 12. | Verslag over de werkzaamheden van
den Phytopathologischen Dienst in het
jaar 1919. (48 blz.) | fr. p. p. f 0.65 |
| No. 13. | Le service phytopathologique aux
Pays-bas. | fr. p. p. f 0.12 |
| No. 13a. | The Phytopathological Service in the
Netherlands. | |
| No. 14. | De bescherming van den mol. | fr. p. p. f 0.20 |
| No. 15. | Proefnemingen met rook, ter bescher-
ming van gewassen tegen nachtvorsten | fr. p. p. f 0.70 |
| No. 16. | De aardappelwratziekte in Nederland
(20 bladz., 5 platen) | fr. p. p. f 0.35 |
| No. 16a. | Black scab (wart disease) in the Nether-
lands. | |
| No. 16b. | La maladie verruqueuse (gale noire)
des pommes de terre aux Pays-Bas. | |
| No. 16c. | Der Kartoffelkrebs in den Nieder-
landen. | |
| No. 17. | Vogelkultuur en vogelstudie (28 bladz.,
1 plaat, 1 staat) | fr. p. p. 0.50 |
| No. 18. | Plantenziektenkundig waarnemingen I,
lepenziekte, Cattleya-kevertje, tarwe-
ontsmetting (20 bladz. en 1 plaat) | fr. p. p. f 0.30 |
| No. 19. | Bestrijding van plantenziekten in kleine
tuinen, 20 bladz., 3 platen, 22 fig. | fr. p. p. f 0.30 |

Voor Vlugschriften zie bladzijde 3 van dit omslag.